# **Evolution Letters**

Open Access









## **Evolution Letters**

Open Access

| COMMENTS AND OPINIONS   |     |
|---|-----|
| Honest signaling and the double counting of inclusive fitness Samuel R. Levin, Shana M. Caro, Ashleigh S. Griffin, and Stuart A. West   | 428 |
| Understanding the evolution of ecological sex differences: Integrating character displacement and the Darwin-Bateman paradigm Stephen P. De Lisle   | 434 |
| LETTERS  Compensatory trans-regulatory alleles minimizing variation in TDH3 expression are common within Saccharomyces cerevisiae  Brian P. H. Metzger and Patricia J. Wittkopp             | 448 |
| Tightly linked antagonistic-effect loci underlie polygenic phenotypic variation in C. elegans Max R. Bernstein, Stefan Zdraljevic, Erik C. Andersen, and Matthew V. Rockman                 | 462 |
| Evolutionary lability in <i>Hox</i> cluster structure and gene expression in <i>Anolis</i> lizards Nathalie Feiner  | 474 |
| Methylation and gene expression differences between reproductive and sterile bumblebee workers<br>Hollie Marshall, Zoë N. Lonsdale, and Eamonn B. Mallon                                    | 485 |
| Selfing ability and drift load evolve with range expansion<br>Matthew H. Koski, Nathan C. Layman, Carly J. Prior, Jeremiah W. Busch, and Laura F. Galloway                                  | 500 |
| Genetics of adaptation: Experimental test of a biotic mechanism driving divergence in traits and genes Diana J. Rennison, Seth M. Rudman, and Dolph Schluter                                | 513 |
| Adaptation to hummingbird pollination is associated with reduced diversification in <i>Penstemon</i> Carolyn A. Wessinger, Mark D. Rausher, and Lena C. Hileman                             | 521 |
| Protective microbiomes can limit the evolution of host pathogen defense<br>C. Jessica E. Metcalf and Britt Koskella   | 534 |
| Evolution of both host resistance and tolerance to an emerging bacterial pathogen Camille Bonneaud, Luc Tardy, Mathieu Giraudeau, Geoffrey E. Hill, Kevin J. McGraw, and Alastair J. Wilson | 544 |
| Infection in patchy populations: Contrasting pathogen invasion success and dispersal at varying times since host colonization  Louise S. Nørgaard, Ben J., Phillips, and Matthew D., Hall   | 555 |



### **Editorial Board**

**Editor in Chief** 

Jon Slate

University of Sheffield, UK j.slate@sheffield.ac.uk

**Managing Editor** 

Shayna Holmes sholmes2@wiley.com

Social Media & Communications Editor

Nicola Hemmings

University of Sheffield, UK

n.hemmings@sheffield.ac.uk

**Preprint Editor** 

Max Reuter

University College London

m.reuter@ucl.ac.uk

**Associate Editors** 

**Lindell Bromham** 

Australian National University, Australia lindell.bromham@anu.edu.au

Anne Charmantier

CNRS, Montpellier, France anne.charmantier@cefe.cnrs.fr

**Andy Gardner** 

University of St. Andrews, UK

mail to: and y. gardner @st-and rews. ac. uk

Zach Gompert

Utah State University, USA zach.gompert@usu.edu

Anjali Goswami

University College London, UK a.goswami@ucl.ac.uk

Katrina Lythgoe

University of Oxford, UK

katrina.lythgoe@zoo.ox.ac.uk

**Judith Mank** 

University of British Columbia, Canada mank@zoology.ubc.ca

Rhonda Snook

Stockholm University, Sweden rhonda.snook@zoologi.su.se

Stephen Wright

University of Toronto, Canada stephen.wright@utoronto.ca

### Aims and Scope

Evolution Letters publishes cutting-edge new research in all areas of Evolutionary Biology. Papers should demand rapid publication because they substantially advance the field, are of outstanding clarity and originality, or are of broad interest. Papers that introduce new analytical or methodological frameworks that are likely to be highly influential will also be considered. Opinion and commentary articles on new developments or emerging themes are also encouraged. Traditional reviews will not be considered, as plenty of appropriate forums for these already exist. The Editor-in-Chief and Editorial Board welcome enquiries about other forms of article. Evolution Letters is jointly owned by the European Society of Evolutionary Biology (ESEB) and the Society for the Study of Evolution (SSE). Profits from the iournal are invested back into the two societies. The journal is online only and entirely open access. The journal has a flexible approach to the format of manuscripts on submission, and will only ask authors to adhere to a house style (see Instructions for Authors) once the manuscript is accepted for publication.





### **Open Access and Copyright**

All articles published by Evolution Letters are fully open access: immediately freely available to read, download and share. All articles are published under the terms of the Creative Commons Attribution License which permits use, distribution and reproduction in any medium, provided the original work is properly cited and allows the commercial use of published articles. Copyright on any research article in a journal published by Evolution Letters is retained by the author(s). Authors grant Wiley a license to publish the article and identify itself as the original publisher. Authors also grant any third party the right to use the article freely as long as its integrity is maintained and its original authors, citation details and publisher are identified. Further information about open access license and copyright can be found at <a href="http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright%E2%80%93License.html">http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright%E2%80%93License.html</a>

## Disclaimer

The Publisher, European Society of Evolutionary Biology, Society for the Study of Evolution, and Editors cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the Publisher, European Society of Evolutionary Biology, Society for the Study of Evolution, and Editors, neither does the publication of advertisements constitute any endorsement by the Publisher, European Society of Evolutionary Biology, Society for the Study of Evolution, and Editors of the products advertised.

Open Access and Copyright: All articles published by Evolution Letters are fully open access: immediately freely available to read, download and share. All articles are published under the terms of the Creative Commons Attribution License which permits use, distribution and reproduction in any medium, provided the original work is properly cited and allows the commercial use of published articles. Copyright on any research article in a journal published by Evolution Letters is retained by the author(s). Authors grant Wiley a license to publish the article and identify itself as the original publisher. Authors also grant any third party the right to use the article freely as long as its integrity is maintained and its original authors, citation details and publisher are identified. Further information about open access license and copyright can be found at <a href="http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright%E2%80%93License.html">http://www.wileyopenaccess.com/details/content/12f25db4c87/Copyright%E2%80%93License.html</a>